



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,853	07/11/2005	Naoharu Yanagawa	041-465-5266	7322
23973 7590 12/19/2008 DRINKER BIDDLE & REATH ATTN: INTELLECTUAL PROPERTY GROUP ONE LOGAN SQUARE 18TH AND CHERRY STREETS PHILADELPHIA, PA 19103-6996				
EXAMINER				
PATANKAR, ANEETA V				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
12/19/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/542,853

**Applicant(s)**

YANAGAWA ET AL.

**Examiner**

Aneeta Patankar

**Art Unit**

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/25/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS-300)
- Paper No(s)/Mail Date 12/3/08

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-7, 11-15, and 18-21** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Pub. 2002/0114249 to *Kato et al.*

As to **claim 1**, *Kato* discloses a tracking servo control device for making a tracking servo control to apply a light beam onto a groove track on a recording medium where the groove track and a pre-pit are preformed, comprising: a first generation device (Fig. 6, paragraph 0040, lines 5-15), where the first generation device are faces (20a,20d) and generates the first generation signals (Ra,Rd), which generates a first regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit is formed within a radiation range of the light beam onto the groove track (Fig. 6, paragraphs 40-41); a second generation device (Fig. 6, paragraph 0040, lines 5-15), where the second generation device are faces (20b,20c) and generates second generation signals (Rb,Rc), which generates a second regenerative signal based on a reflected light from the recording medium when the pre-pit is formed outside the radiation range of the light beam (Fig. 13A-B, paragraphs 70-71); and a calculation device which calculates an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated (Fig. 5 and 6,

paragraphs 0041-0044), where head amplifier (25), adders (21,22), and subtractor (24), are all part of the calculation device and are used in controlling servo device (4) in minimizing the offset.

As to **claim 2**, *Kato* discloses the tracking servo control device, wherein the calculation device calculates the offset value so that a difference between the amplitude value of the first regenerative signal and the amplitude value of the second regenerative signal is minimized (Fig. 6, paragraph 0044, lines 1-6), where the difference in the amplitude is determined by subtractor (24) and the first signal is  $(R_a+d)$  and the second signal is  $(R_b+c)$  and the difference minimizes the amplitude.

As to **claim 3**, *Kato* discloses the tracking servo control device, wherein the calculation device calculates the offset value so that a difference between the lower peak value of the first regenerative signal and the lower peak value of the second regenerative signal is minimized (Fig. 20A-F, paragraph 0098, lines 1-10), where the output of converter (113) is minimum value of the LPP component ( $LP_{min}$ ) and is the minimum of the peak values of the regenerative signals.

As to **claim 4**, *Kato* discloses the tracking servo control device, wherein the calculation device calculates the offset value so that difference between the upper peak value of the first regenerative signal and the upper peak value of the second regenerative signal is minimized (Fig. 12, paragraph 0068), where the average maximum value of ( $WO_{max}$ ) is the upper peak values of the regenerative signals minimized.

As to **claim 5**, *Kato* discloses the tracking servo control device, wherein the calculation device calculates the offset value so that the sum of an error count of information obtained from the first regenerative signal and an error count of information obtained from the second regenerative signal is minimized (Fig. 16, paragraph 0081, lines 1-7), where error correction is minimizing the error counts from the first and second regenerative signals and the calculation device is the optical inspection device.

As to **claim 6**, *Kato* discloses a tracking servo control device for making a tracking servo control to apply a light beam onto a groove track on a recording medium where the groove track and a pre-pit are preformed, comprising: a first generation device which generates a first regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit adjacent to the information pit in one direction is formed within a radiation range of the light beam onto the groove track (Fig. 6, paragraphs 40-41); a second generation device which generates a second regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit adjacent to the information pit in another direction is formed within the radiation range of the light beam (Fig. 13A-B, paragraphs 70-71); and a calculation device which calculates an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated (Fig. 6, paragraphs 42-44).

As to **claim 7**, *Kato* discloses the tracking servo control device, wherein the calculation device calculates the offset value so that a difference between the amplitude

value of the first regenerative signal and the amplitude value of the second regenerative signal is minimized (Fig. 7, paragraph 52).

As to **claim 11**, *Kato* discloses the tracking servo control device wherein the calculation device calculates the offset value so that the sum of an error count of data obtained from the first regenerative signal and an error count of data obtained from the second regenerative signal is minimized (Fig. 6, paragraph 41).

As to **claim 12**, *Kato* discloses the tracking servo control device wherein the calculation of the offset value by the calculation device is made employing the information pits formed in a continuous area where the information pits are formed (Fig. 5, paragraph 38).

As to **claim 13**, *Kato* discloses the tracking servo control device wherein the calculation of the offset value by the calculation device is made employing the information pits formed in a linking area of the recording medium (Fig. 2, paragraphs 45-46).

As to **claim 14**, *Kato* discloses the tracking servo control device, wherein the calculation of the offset value by the calculation device is made employing the information pits formed in a preset area for adjusting the light quantity of the light beam (Fig. 5, paragraph 38).

As to **claim 15**, *Kato* discloses the tracking servo control device, wherein the calculation of the offset value by the calculation device is made employing the information pits formed in one area of the recording medium where the information pits

are formed (Fig. 5, paragraph 38), the information pits being subjected to an error detection/correction with an error detection/correction code (Fig. 6, paragraph 41).

As to **claim 18**, *Kato* discloses a tracking servo control method for making a tracking servo control to apply a light beam onto a groove track on a recording medium where the groove track and a pre-pit are preformed, comprising: a first generation step of generating a first regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit is formed within a radiation range of the light beam onto the groove track (Fig. 6, paragraph 40-41); a second generation step of generating a second regenerative signal based on a reflected light from the recording medium when the pre-pit is formed outside the radiation range of the light beam (Fig. 13A-B, paragraphs 70-71); and a calculation step of calculating an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated (Fig. 6, paragraph 42-44).

As to **claim 19**, *Kato* discloses a tracking servo control method for making a tracking servo control to apply a light beam onto a groove track on a recording medium where the groove track and a pre-pit are preformed, comprising: a first generation step of generating a first regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit adjacent to the information pit in one direction is formed within a radiation range of the light beam onto the groove track (Fig. 6, paragraphs 40-41); a second generation step of generating a second regenerative signal based on a reflected light from the recording medium when the pre-pit adjacent to the information pit in the other direction is formed within the radiation range of the light

beam (Fig. 13A-B, paragraphs 70-71); and a calculation step of calculating an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated (Fig. 6, paragraphs 42-44).

As to **claim 20**, *Kato* discloses a tracking servo control program for a tracking servo control device for making a tracking servo control to apply a light beam onto a groove track on a recording medium where the groove track and a pre-pit are preformed, the program makes a computer contained in the tracking servo control device function as: a first generation device for generating a first regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit is formed within a radiation range of the light beam onto the groove track (Fig. 6, paragraphs 40-41); a second generation device for generating a second regenerative signal based on a reflected light from the recording medium when the pre-pit is formed outside the radiation range of the light beam (Fig. 13A-B, paragraphs 70-71); and a calculation device for calculating an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated (Fig. 6, paragraphs 42-44).

As to **claim 21**, *Kato* discloses a tracking servo control program for a tracking servo control device for making a tracking servo control to apply a light beam onto a groove track on a recording medium where the groove track and a pre-pit are preformed, the program makes a computer contained in the tracking servo control device function as: a first generation device for generating a first regenerative signal based on a reflected light from the recording medium when at least a part of the pre-pit



adjacent to the information pit in one direction is formed within a radiation range of the light beam onto the groove track (Fig. 6, paragraphs 40-41); a second generation device for generating a second regenerative signal based on a reflected light from the recording medium when the pre-pit adjacent to the information pit in the other direction is formed within the radiation range of the light beam (Fig. 13A-B, paragraphs 70-71); and a calculation device for calculating an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated (Fig. 6, paragraphs 42-44).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. 2002/0114249 to *Kato et al.* in view of U.S. Patent No. 6,058,093 to *Kato et al.* 2.

As to **claim 8**, *Kato* is deficient to disclosing the tracking servo control device, further comprising a third generation device for generating a third regenerative signal based on a reflected light from the recording medium for the light beam when the pre-pit is formed outside the radiation range of the light beam, wherein the control device calculates the offset value so that a difference between the upper peak value of the third regenerative signal and an average value of the upper peak value of the first

regenerative signal and the upper peak value of the second regenerative signal is minimized.

However, *Kato 2* discloses the tracking servo control device, further comprising a third generation device for generating a third regenerative signal based on a reflected light from the recording medium for the light beam when the pre-pit is formed outside the radiation range of the light beam (Column 6, lines 1-7), wherein the control device calculates the offset value so that a difference between the upper peak value of the third regenerative signal and an average value of the upper peak value of the first regenerative signal and the upper peak value of the second regenerative signal is minimized (Column 6, lines 40-67).

*Kato* and *Kato 2* are analogous art because they are from the same field of endeavor with respect to pre-pit detection on an optical medium.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to create a servo control device that comprises a first, second and third generation device for generating a first, second and third regenerative signal, respectively. The suggestion/motivation would have been in order to maximize the detection margin and a pre-pit can be accurately detected as taught by *Kato* in view of *Kato 2* (Column 6, lines 40-67).

As to **claim 9**, *Kato* is deficient to disclosing the tracking servo control device, further comprising a third generation device for generating a third regenerative signal based on a reflected light from the recording medium for the light beam when the pre-pit is formed outside the radiation range of the light beam, wherein the calculation device

calculates the offset value so that a difference between the lower peak value of the third regenerative signal and an average value of the lower peak value of the first regenerative signal and the lower peak value of the second regenerative signal is minimized.

However, *Kato 2* discloses the tracking servo control device, further comprising a third generation device for generating a third regenerative signal based on a reflected light from the recording medium for the light beam when the pre-pit is formed outside the radiation range of the light beam (Column 6, lines 1-7), wherein the calculation device calculates the offset value so that a difference between the lower peak value of the third regenerative signal and an average value of the lower peak value of the first regenerative signal and the lower peak value of the second regenerative signal is minimized (Column 5, lines 42-67). In addition, the same motivation is used as the rejection for claim 8.

As to **claim 10**, *Kato* is deficient to disclosing the tracking servo control device, wherein the calculation device calculates the offset value so that a difference between the lower peak value of the third regenerative signal and an average value of the lower peak value of the first regenerative signal and the lower peak value of the second regenerative signal is minimized.

However, *Kato 2* discloses the tracking servo control device, wherein the calculation device calculates the offset value so that a difference between the lower peak value of the third regenerative signal and an average value of the lower peak value of the first regenerative signal and the lower peak value of the second

regenerative signal is minimized (Column 5, lines 42-67). In addition, the same motivation is used as the rejection for claim 8.

5. **Claims 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. 2002/0114249 to *Kato et al.* in view of U.S. Patent No. 6,987,714 B2 to *Watabe et al.*

As to **claim 16**, *Kato* is deficient to disclosing the tracking servo control device, wherein the formation pattern of the information pit is constant.

However, *Watabe* discloses the tracking servo control device, wherein the formation pattern of the information pit is constant (Fig. 6A-B, column 5, lines 1-15).

*Kato* and *Watabe* are analogous art because they are from the same field of endeavor with respect to optical mediums

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to create a tracking servo device with a calculating device that calculates the offset value in the tracking servo control based on the first regenerative signal and second regenerative signal and the formation pattern of the information pit is constant. The suggestion/motivation would have been in order to be able to reproduce signals from the wobble pits as taught by *Kato* in view of *Watabe* (Fig. 6A-B, column 4, lines 53-67).

As to **claim 17**, *Kato* is deficient to disclosing the tracking servo control device, wherein the information pit is employed for recording the information recorded with an error detection/correction code, and the position of the information pit on the recording medium is specified by the error detection/correction code.

However, *Watabe* discloses the tracking servo control device, wherein the information pit is employed for recording the information recorded with an error detection/correction code, and the position of the information pit on the recording medium is specified by the error detection/correction code (Fig. 7A, column 5, lines 18-40). In addition, the same motivation is used as the rejection for claim 16.

### ***Response to Arguments***

1. Applicant's arguments filed 8/25/08 have been fully considered but they are not persuasive.

Applicant argues that *Kato* is not analogous to the instant application as *Kato* involves optimizing a threshold value from a push-pull signal to generate a digital signal and the instant application is a method for recording by minimizing an offset value.

Examiner disagrees as both *Kato* does disclose a method of minimizing an offset value (Paragraphs 0066-0067), where adding of offset value  $\Delta V1$  to the maximum  $WO_{max}$  and subtracting an offset value  $\Delta V2$  from minimum value  $LP_{min}$  is minimizing the amount of offset.

Applicant argues, with respect to claim 1, on page 2, lines 15-20, that *Kato* fails to teach "calculation device which calculates an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated".

Examiner disagrees as *Kato* does teach "calculation device which calculates an offset value in the tracking servo control based on the first regenerative signal and the second regenerative signal that are generated" (Fig. 5 and 6, paragraphs 0041-0044),

where head amplifier (25), adders (21,22), and subtractor (24), are all part of the calculation device and are used in controlling servo device (4) in minimizing the offset.

Applicant argues also, with respect to claim 1, on page 3, lines 9-17, and claim 6, pages 2-3, lines 18-7, that *Kato* fails to teach "first generation device" and "second generation device".

Examiner disagrees as *Kato* does teach "first generation device" (Fig. 6, paragraph 0040, lines 5-15), where the first generation device are faces (20a,20d) and generates the first generation signals (Ra,Rd), and "second generation device" (Fig. 6, paragraph 0040, lines 5-15), where the second generation device are faces (20b,20c) and generates second generation signals (Rb,Rc).

Applicant argues, with respect to claim 2, on page 5, lines 1-11, that *Kato* fails to teach "the calculation device calculates the offset value so that a difference between the amplitude value of the first regenerative signal and the amplitude of the second regenerative signal is minimized".

Examiner disagrees, as *Kato* teaches "the calculation device calculates the offset value so that a difference between the amplitude value of the first regenerative signal and the amplitude of the second regenerative signal is minimized" (Fig. 6, paragraph 0044, lines 1-6), where the difference in the amplitude is determined by subtractor (24) and the first signal is (Ra+d) and the second signal is (Rb+c) and the difference minimizes the amplitude.

Applicant argues, with respect to claim 3, on page 5, lines 12-22, that *Kato* fails to teach "the calculation device calculates the offset value so that a difference between

the lower peak value of the first regenerative signal and the lower peak value of the second regenerative signal is minimized".

Examiner disagrees as *Kato* does teach "the calculation device calculates the offset value so that a difference between the lower peak value of the first regenerative signal and the lower peak value of the second regenerative signal is minimized" (Fig. 20A-F, paragraph 0098, lines 1-10), where the output of converter (113) is minimum value of the LPP component (LPmin) and is the minimum of the peak values of the regenerative signals.

Applicant argues, with respect to claim 4, on page 6, lines 1-11, that *Kato* fails to teach "the calculation device calculates the offset value so that a difference between the upper peak value of the first regenerative signal and the upper peak value of the second regenerative signal is minimized".

Examiner disagrees as *Kato* does teach "the calculation device calculates the offset value so that a difference between the upper peak value of the first regenerative signal and the upper peak value of the second regenerative signal is minimized" (Fig. 12, paragraph 0068), where the average maximum value of (WOMax) is the upper peak values of the regenerative signals minimized.

Applicant argues, with respect to claim 5, on page 6, lines 12-22, that *Kato* fails to teach "the calculation device calculates the offset value so that the sum of an error count of information obtained from the first regenerative signal and an error count of information obtained from the second regenerative signal is minimized".

Examiner disagrees as *Kato* does teach "the calculation device calculates the offset value so that the sum of an error count of information obtained from the first regenerative signal and an error count of information obtained from the second regenerative signal is minimized" (Fig. 16, paragraph 0081, lines 1-7), where error correction is minimizing the error counts from the first and second regenerative signals and the calculation device is the optical inspection device.

### ***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aneeta Patankar whose telephone number is (571) 272-



9773. The examiner can normally be reached on Monday-Thursday 8-5, Second Friday, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrea L Wellington/  
Supervisory Patent Examiner, Art  
Unit 2627

/A.P./  
12/8/08